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EXAMINER

DUFF, DOUGLAS J

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**BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES**

Application Number: 10/575,162  
Filing Date: May 24, 2006  
Appellant(s): ROUPHAEL, ROGER

Robert E. Goozner, Reg. No. 42,593  
For Appellant

**SUPPLEMENTAL EXAMINER'S ANSWER**

This is in response to the appeal brief filed 5/12/08 appealing from the Office action  
mailed 12/12/07.

**(1) Real Party in Interest**

A statement identifying by name the real party in interest is contained in the brief.

**(2) Related Appeals and Interferences**

The Examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

**(3) Status of Claims**

The statement of the status of claims contained in the brief is correct. However, the Examiner has withdrawn some of the previous rejections as set forth below.

**(4) Status of Amendments After Final**

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

**(5) Summary of Claimed Subject Matter**

The summary of claimed subject matter contained in the brief is correct.

**(6) Grounds of Rejection to be Reviewed on Appeal**

**112 1<sup>st</sup> and 2<sup>nd</sup> Paragraph Rejections**

Appellant's arguments with respect to claims 11, 15 and 18 were deemed persuasive, and the 112 rejections relating thereto are hereby withdrawn.

Additionally, Appellant's arguments with respect to claims 11, 15 and 18 as being unpatentable over Kolmanovsky under 103(a) were also persuasive, accordingly this rejection has also been withdrawn.

The fourth ground of rejection for claims 11, 15 and 18 under 35 USC 103(a) as being unpatentable over Kolmanovsky et al. has been withdrawn.

The copy of the appealed claims contained in the Appendix to the brief is correct.

**5738126** **Fausten**

The following ground(s) of rejection are applicable to the appealed claims:

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 9, 10, 12-14, 16 and 17, 19, 21, 25 and 26 are rejected under 35 U.S.C. 102(b) as being anticipated by Kolmanovsky et al. (US 6035640). Regarding claims 9 and 13, Kolmanovsky et al. discloses an air supply control method for a turbocharged engine (10) having an intake manifold (26) downstream of the compressor (36) of the turbocharger and an exhaust manifold (28) upstream of the turbine (38) of

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the turbocharger, in which the mass air flow supplied to the engine and/or the pressure in the intake manifold ( $P_m$ ) are determined, together with the temperature in the exhaust manifold ( $T_{exh}$ ), characterized in that the pressure in the exhaust manifold is determined as a function of the pressure in the intake manifold ( $P_m$ ), the engine speed ( $N$ ), and the temperatures in the cylinders and in the exhaust manifold ( $T_a$ ,  $T_{exh}$ ), the pressure in the intake manifold being determined if necessary on the basis of the mass air flow ( $m$ ) and the exhaust manifold pressure ( $P_{exh}$ ) is measured by a sensor (54) and that the pressure in the intake is determined on the basis of exhaust pressure as a function of speed ( $N$ ), cylinder and exhaust temperatures ( $T_a$ ,  $T_{exh}$ , equation 6, col. 5).

3. Regarding claims 10 and 14, Kolmanovsky et al. discloses the air supply control method of claims 9 and 13 including a correction factor dependent on the ambient surrounding pressure ( $P_a$ ) provided (col. 5, equation 6).

4. Regarding claims 12 and 17, Kolmanovsky et al. discloses the air supply control method of claims 9 and 10 including a throttle valve, and when the throttle valve (col. 4, lines 1-5) is near the closed position, the ambient external pressure ( $P_a$ ) is calculated on the basis of exhaust pressure ( $P_{exh}$ ) as a function of engine speed ( $N$ ).

5. Regarding claim 16, Kolmanovsky et al. discloses the air supply control method of claim 9 including the temperature in the exhaust manifold ( $T_{exh}$ ) being determined on the basis of modeling (lookup table, col. 7, lines 35-36).

6. Regarding claims 19 and 21, Kolmanovsky et al. discloses the air supply control method of claims 9 and 13 including an air intake (42) and a mass air flow meter (64) are upstream of the turbocharger (14).

7. Regarding claims 25 and 26, Kolmanovsky et al. discloses the air supply control method of claims 9 and 13 including a correlation between a measured value (EXMP) and the determined pressure (through eqn. 6) in the exhaust manifold is greater than 0.9 (correlation is 1 when error 208, 210 is 0, col. 5, lines 45-48).

***Claim Rejections - 35 USC § 103***

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 20 and 22-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kolmanovsky et al. in view of Fausten (US 5738126). Regarding claims 20 and 22, Kolmanovsky et al. discloses the control method of claims 9 and 13, but fails to disclose an intercooler downstream of the turbocharger.

10. Fausten teaches an engine control method including having an intercooler (7) downstream of the turbocharger (3). It would have been obvious for a person having ordinary skill in the art at the time the invention was made to utilize an intercooler downstream of the turbocharger in order to increase the efficiency of the system through cooling of the compressed intake air.

11. Regarding claims 23 and 24, Kolmanovsky et al. discloses the method of claims 9 and 13, but fails to disclose the air flow supplied to the engine being regulated by a mechanically controlled throttle valve.

12. Fausten teaches an engine control method including the air flow supplied to the engine being regulated by a mechanically controlled throttle valve (9). It would have been obvious for a person having ordinary skill in the art at the time the invention was made to utilize a mechanically controlled throttle valve in order to accurately control the amount of air entering the engine through the intake passage.

### **(10) Response to Argument**

#### **Brief Description of Kolmanovsky et al.**

Kolmanovsky et al. disclose a turbocharged engine system and several methods to determine various operating parameters within the engine including pressures, temperatures and flow volumes. Specifically, Kolmanovsky is concerned with determining these parameters in order to "achieve the desired compressor mass airflow rate and exhaust manifold pressure" (col. 2, lines 17-32). Column 4 and 5 of Kolmanovsky continue to describe the use of a controller 202 to calculate and generate set point values for intake pressure ( $P_m$ ), engine speed ( $N$ ), cylinder temperatures (col. 3, line 67) and exhaust temperatures ( $T_{exh}$ ).

Appellant's sole argument is that Kolmanovsky et al. fail to teach or suggest how pressure in the intake or exhaust manifold can be calculated from other parameters. Kolmanovsky et al. specifically disclose that "the exhaust manifold temperature is measured by a sensor or can be *determined from a lookup table indexed by engine speed, the requested fueling rate, and the desired AF ratio*" (col. 7, lines 33-36, emphasis added by Examiner). These values are obtained by optimizing the steady-state fuel consumption and emissions based on the engine mapping data stored in the

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controller 202 (Figures 2, 3). As shown in Figure 3, Kolmanovsky et al. teach that manifold pressure ( $P_{exh}$ , 302) is determined as a function of intake pressure ( $P_m$ , 310), engine speed ( $N$ , 302), cylinder temperature (col. 3, line 67) and exhaust temperature ( $T_{exh}$ , 304). Just as the Appellant is determining intake and exhaust pressures through controller-calculated estimates, the Kolmanovsky et al. method determines these same pressure parameters through controller-calculated estimates, in addition to directly sensing of the parameters.

**(11) Related Proceeding(s) Appendix**

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

/Douglas J Duff/

Examiner, Art Unit 3748

8/12/08

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